

Table 1***Filter Lenses for Protection Against Radiant Energy***

Operations	Electrode Size in 1/32" (0.8 mm)	Arc Current	Minimum* Protective Shade
Shielded metal arc welding	<3	<60	7
	3–5	60–160	8
	5–8	160–250	10
	>8	250–550	11
Gas metal arc welding and flux cored arc welding		<60	7
		60–160	10
		160–250	10
		250–550	10
Gas tungsten arc welding		<50	8
		50–150	8
		150–500	10
Air carbon	(light)	<500	10
Arc cutting	(heavy)	500–1,000	11
Plasma arc welding		<20	6
		20–100	8
		100–400	10
		400–800	11
Plasma arc cutting	(light)**	<300	8
	(medium)**	300–400	9
	(heavy)**	400–800	10
Torch brazing			3
Torch soldering			2
Carbon arc welding			14

Filter Lenses for Protection Against Radiant Energy

Operations	Plate Thickness inches	Plate Thickness mm	Minimum* Protective Shade
Gas welding: Light	<1/8	<3.2	4
Gas welding: Medium	1/8–1/2	3.2–12.7	5
Gas welding: Heavy	>1/2	>12.7	6
Oxygen cutting: Light	<1	<25	3
Oxygen cutting: Medium	1–6	25–150	4
Oxygen cutting: Heavy	>6	>150	5

*As a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the (spectrum) operation.

**These values apply where the actual arc is clearly seen. Experience has shown that lighter filters may be used when the arc is hidden by the workpiece.

Source: 29 CFR 1910.133(a)(5).